CSC 421
Assignment 2

Question 2:

The courses are subject to following constraints:

1. Courses might have prerequisite courses that need to be taken before.
2. Some courses are offered in certain terms only.
3. We want to take not more than 4 courses per term.
4. Time conflicts should be avoided.

sample of the domains and formalize the constraints.

Variables are the courses(CSC421,CSC375 ..etc) and values are the combination of four courses per term.(CSC 421, CSC 375, CSC 330, CSC360..)

Domains are the tuples consist of (Semester ,Time , Course number(We should know if there's a time conflict among courses))

Ex) D = { (2017 Fall,8:30 am – 9:50 am, 1(The first of four combinations))

(2017 Fall,10:00 am – 11:20 am, 2(The Second of four combinations))

(2017 Fall,11:30 am – 12:20 am, 3(The Third of four combinations))

(2017 Fall,12:30 am – 1:50 am, 4(The Fourth of four combinations))

(2017 Spring , 8:30am – 9:50 am,1) … containing all courses) }

We want to take not more than 4 courses per term.

Constraints might be various. Let X = a random course at Uvic and Y = a random course but X is not equal to Y. Suppose A is an assignment containing term, slot and time, so A is consistent if and only if term and slot for X is not equal to term and slot for Y.

Time conflicts should be avoided.

To avoid time conflict, we should place a constraint when two courses appear with the same time and the same term, meaning that when term X = term Y, the intersection of time X and Y should be none.(time X ∩ time Y=∅) in order for A to be consistent.

Some courses are offered in certain terms only.

If some courses are offered in certain time only, we need to get rid of illegal term values from the domain of our variables. This way, variable wouldn't contain any values when the course are not offered.

We want to take not more than 4 courses per term.

The other constraint might be regarding prerequisites. We can represent it using >, <, Let course A is a prerequisite for course B, and taking A in term X from (term X, time X, slot X) and B in term Y from (term Y, time Y, slot Y). Then term Y > term X, meaning that term Y is a newer term and term X is a previous term, so in this case our constraint should be term Y > term X.